

Q1
1. (Amended) A plunger lift for a well producing through a production string communicating with a hydrocarbon formation, comprising a free piston having at least two sections, movable independently downwardly in the well, the sections being united at the bottom of the well for upward movement together in the well and having an exterior seal [for upward movement together in the well] for pushing liquid, above the piston, upwardly, wherein the sections nest together during upward movement in the well.

Q2
~~2.~~ (Amended) The plunger lift of claim [4] 1 further comprising means for sealing between the first and second sections when the sections nest together.

Q3
~~3.~~ (Amended) A plunger lift for a well producing through a production string communicating with a hydrocarbon formation, comprising a free piston having at least two sections, movable independently downwardly in the well, the sections being united at the bottom of the well for upward movement together in the well and having an exterior seal for pushing liquid, above the piston, upwardly. [The plunger lift of claim 1 wherein] a first of the sections provides a first flow bypass around the first section allowing the first section to move downwardly in the well against the flow of formation products upwardly in the well and a second

93 section of the sections provides a restrictor for reducing the size of the first flow bypass when the first and second sections are united.

94 13. (Amended) A plunger lift for a well producing through a production string communicating with a hydrocarbon formation, comprising a free piston having at least two sections, movable independently downwardly in the well, the sections being united at the bottom of the well for upward movement together in the well and having an exterior seal for pushing liquid, above the piston, upwardly and [The plunger lift of claim 1 comprising] means for separating the sections adjacent an end of upward movement in the well.

95 15. (Amended) A plunger lift for a well producing through a production string communicating with a hydrocarbon formation, comprising a free piston having at least upper and lower sections, movable independently downwardly in the well, the sections being united at the bottom of the well for upward movement together in the well and having an exterior seal for pushing liquid, above the piston, upwardly [The plunger lift of claim 1 wherein a first of the sections is an upper section and a second of the sections is a lower section], the lower section being configured to move upwardly

upon exposure to a predetermined pressure differential before the upper section moves [having more downwardly facing area than the upper section whereby a pressure differential across the united upper and lower sections produces a greater upward force on the lower section than on the upper section if the sections move apart].

95 17. (Amended) In a plunger lift for lifting liquids from a well producing through a production string communicating with a hydrocarbon formation, comprising a piston having separate sections movable independently downwardly into the well, each of the separate sections providing a downwardly facing cross-sectional area that is insufficient to move the section upwardly in response to gas flow emitting from the formation.

96 18. (Amended) The plunger lift of claim [18] 17 wherein a first of the sections is an upper section and a second of the [sections] sections is a lower section, the lower section having more downwardly facing area than the upper section whereby a pressure differential across the united upper and lower sections produces a greater upward force on the lower section than on the upper section if the sections move apart.

19
20. (Amended) In a plunger lift for lifting liquids from a well producing through a production string communicating with a hydrocarbon formation and through a well head, comprising

a piston and a decoupler adjacent the well head for separating the piston into separate sections in response to upward movement of the piston thereby allowing the sections to fall separately into the well;

96
means uniting the sections together adjacent the formation for movement together upwardly in the production string to push liquids upwardly in the well in response to gas flow into the production string from the formation;

a bumper spring inside the production string adjacent the formation for engaging the piston and cushioning impact near an end of downward piston movement; and

a catcher adjacent the well head for catching a first of the sections and means for releasing the first section in response to a signal.

28
31. A plunger lift for a well producing through a production string communicating with a hydrocarbon formation, comprising a free piston having at least first and second sections, movable independently downwardly in the well, the sections being united at the bottom of the well for upward movement together in the well and

97

97
having an exterior seal for pushing liquid, above the piston, upwardly, the first section comprising a sleeve having means on the exterior of the sleeve for minimizing fluid bypass on the outside of the sleeve and a passage allowing formation contents to flow through the sleeve when the sleeve is falling into the well and the second section includes a restrictor for reducing flow through the passage when the sections unite at the bottom of the well.

29
32. A plunger lift for a well producing through a production string communicating between a hydrocarbon formation and a well head, comprising a free piston having at least first and second sections, movable independently downwardly in the well, the sections including means joining the sections together at the bottom of the well for upward movement together in the well and having an exterior seal for pushing liquid, above the piston, upwardly.

30 29
33. The plunger lift of claim 32 wherein the well head comprises a decoupler for separating the free piston into separate sections.

31 30
34. The plunger lift of claim 33 wherein the first section comprises a passage therethrough and the second section comprises a restrictor for reducing the size of the passage and the decoupler comprises a downwardly extending member projecting at least